

SMITHSONIAN
JAN 16 1987

NEW SPECIES OF *MASTOGENIUS* (COLEOPTERA: BUPRESTIDAE) FROM CENTRAL AMERICA, WITH NOTES AND A KEY TO SPECIES OF CENTRAL AND SOUTH AMERICA¹

Gary V. Manley²

ABSTRACT: Two new species are described from the central mountains of Costa Rica, *Mastogenius pacacua* and *M. cedralensis*. A third new species is described from the Upper Aguan Valley of Honduras, *M. coyolensis*. *M. bordoni* Cobos is placed as a synonym of *M. cyaneus* Fisher. A key to the species of *Mastogenius* from Central and South America is presented.

The first record of *Mastogenius* from Central America was *M. cyaneus* Fisher from Panama. While several species of the genus are known from Mexico, South America, and the West Indies, no other records have been published from Central America. The collection of an undescribed species from the Aguan Valley in 1977 represented the first record of the genus from Honduras and only the second species from Central America. During 1983 and 1984 two new species were collected from Costa Rica.

Toyoma (1983) separated *Haplostethus* from *Mastogenius* and Nelson (1985) placed the North American species of Mastogeniini in *Haplostethus*. Based on a study of the New World Mastogeniini (Manley, 1986), I believe *Haplostethus* should remain a synonym of *Mastogenius*. Therefore, the name *Mastogenius* is retained, following the synonymy of Cobos (1981). A key to the described species from South and Central America is given.

Mastogenius pacacua Manley, new species

(Figs. 1, 7 & 11)

Holotype, male: Elongate oval, strongly shining, pronotum pubescent, elytra glabrous, dorsal surface uniformly black appearing slightly olive-green in sunlight and occasionally when viewed with incandescent illumination, ventral surface and legs uniformly black with a distinct brown tinge. **HEAD** slightly convex, with distinctly elongately depressed frons: surface punctate with each puncture having a single short setae, area between punctures smooth; eyes with inner margins slightly converging toward apex; antennae serrate with fourth segment, hairy, extending beyond prosternum. **PRONOTUM** strongly, uniformly convex, wider than long, distinctly narrower at apex than at base, widest at posterior 1/3, sides broadly arcuately diverging from apical angles to near posterior one-third, then feebly obliquely converging to posterior angles; anterior margin broadly rounded in front, posterior margin truncate, slightly sinuate; marginal and submarginal carina widest apart anterior to middle of pronotum, marginal carina not reaching anterior border of pronotum; surface uniformly densely punctate, and clothed with short recumbent hairs, intervals smooth. **SCUTELLUM**

¹Received December 11, 1985. Accepted June 14, 1986.

²Department of Zoology, Michigan State University, East Lansing, MI 48824.

black, triangular and smooth. ELYTRA convex, as wide as pronotum at base; sides nearly parallel from humeral angles to beyond middle, then arcuately converging to broadly rounded apices; oblique transverse depression near bases; surface uniformly irregularly punctate, intervals smooth, sparsely clothed with very short, semi-erect hairs, hairs arising from bases of elytral punctures. ABDOMEN beneath uniformly black with slight dark brown reflection, convex, punctate, sparsely clothed with short recumbent hairs; last sternite densely punctate, truncate at apex, clothed with scattered long erect hairs. PROSTERNUM, punctate, with scattered recumbent hairs, without antennal grooves. Posterior margin of hind coxal plates sinuate, equally wide at interior and external margins. SIZE: Length, 3.1 mm; width, 1.3 mm.

Allotype, female: No significant differences observed between sexes of this species. Female slightly larger than male.

Types: Holotype, Costa Rica, San Jose province, 2 km east of Colon, March 3, 1984, Gary V. Manley, 1550 meters. Allotype and three male paratypes collected from the same locality as the holotype on April 20, 1984 by Gary V. Manley. Type material currently in G.V. Manley collection but will be deposited in (U.S.) National Museum of Natural History.

Etymology: All specimens collected sweeping along forest margins below the peak of Cerro Pacacua for which this species is named.

Mastogenius cedralensis Manley, new species

(Figs. 2, 8 & 12)

Holotype, male: Elongate oval, shining, pronotum pubescent, elytra pubescent, dorsal surface uniformly black, ventral surface and legs uniformly black, except tarsi which are testaceous. HEAD slightly convex, flat in front, without distinctly depressed frons; surface rather coarsely punctate with each puncture having a single recumbent setae, smooth between punctures; eyes with inner margins converging to each other toward apex; antennae serrate from the fourth segment, hairy, extending beyond the pronotum. PRONOTUM uniformly convex, wider than long, narrower at apex than at base, widest at posterior 1/4, sides broadly arcuately diverging from apical angles to near posterior 1/4, then feebly obliquely converging to posterior angles; anterior margin sinuate, broadly rounded in front, posterior margin truncate; marginal and submarginal carina only slightly wider apart near middle, anterior half nearly parallel, marginal carina not reaching anterior border of pronotum, anterior tip straight; surface uniformly densely punctate, and clothed with recumbent hairs, intervals smooth. SCUTELLUM black triangular, smooth. ELYTRA convex, as wide as pronotum at base; sides nearly parallel from humeral angles to beyond middle, then arcuately converging to broadly rounded apices; with oblique transverse depression near bases; surface uniformly, irregularly densely punctate, uniformly clothed with posterior facing recumbent hairs similar in density and length to those of pronotum. ABDOMEN beneath, convex, punctate, clothed with recumbent hairs; last sternite densely punctate, truncate at apex, clothed with hairs. PROSTERNUM coarsely punctate, with scattered hairs, without antennal grooves. Posterior margin of hind coxal plates sinuate, external margin narrowed, less than one-half the width of interior margin. Size, length 3.1 mm, width 1.2 mm at elytral humeri.

Allotype, female: Differs from the male as follows: pronotum shining aeneous, elytra bicolored, anterior 1/3 and posterior 1/3 strongly shining aeneous with golden reflection, middle 1/3 shining deep blue with violet reflection, apices of elytra concolorous with middle region. Gold and blue regions not sharply defined and may vary depending on viewing angle. When viewed without a microscope elytra appear brassy blue-green and color patterns cannot be separated. Both pronotum and elytra clothed with hairs but hairs less dense and shorter than

in male. Antennae shorter, not reaching posterior margin of pronotum. Length 3.2 mm; width (pronotum) 1.4 mm (elytra) 1.3 mm.

Types: Holotype, Costa Rica, San Jose, 2 km. east Colon, April 20, 1984, Gary V. Manley. Collected on the upper slopes of Cerro Pacacua at between 1500-1600 meters. Allotype and one female paratype collected at the same locality and date as the holotype. Type material currently in G.V. Manley collection but will be deposited in (U.S.) National Museum of Natural History.

Etymology: The species is named after Calle Cedral, a trail which follows along the top of the ridge between Colon and Santa Ana on the south edge of the Central Valley west of San Jose. Specimens were collected along this trail in wooded patches.

***Mastogenius coyolensis* Manley, new species**
(Figs. 3 & 9)

Holotype, female. Elongate oval, shining, dorsal surface uniformly deep aeneous brown, ventral surface uniformly black, pronotum and elytra equally pubescent. HEAD slightly convex in front, a distinct but shallow round depression on frons between eyes; surface coarsely irregularly punctate with scattered short white pubescence, intervals smooth; eyes with inner margins slightly converging toward apex; antennae serrate from fourth segment, not extending beyond pronotum when laid along side, triangular segments with scattered hairs. PRONOTUM uniformly convex, wider than long, narrower at apex than at base, widest anterior to middle, side arcuately diverging from apical angles to near middle, then converging to basal angles; anterior and posterior margins straight; marginal and submarginal carinae widest apart just posterior to middle, marginal carina not reaching anterior border of pronotum, sloping toward submarginal carina at anterior termination; surface uniformly densely punctate, intervals smooth, uniformly clothed with short recumbent white hairs. SCUTELLUM black, triangular, smooth except for a few very fine shallow punctations. ELYTRA convex, as wide as pronotum at base; sides subparallel from humeral angles to beyond middle, then arcuately converging to subtruncate apices; oblique transverse depressions near base; surface uniformly irregularly punctate, intervals smooth, sparsely clothed with semi-erect white hairs, hairs arising from elytra punctures. VENTRAL THORAX convex, coarsely and densely punctate with scattered recumbent white hairs; prosternum without antennal grooves; posterior margins of hind coxal plates sinuate, narrowed laterally. ABDOMEN convex, moderately punctate, sparsely clothed with recumbent white hairs and scattered longer hairs near middle of abdominal sternites; last sternite more coarsely punctate with mixture of short and long hairs, truncate at apex. **SIZE:** length 3.1 mm, width 1.2 mm.

Type material: Holotype, Honduras, Coyoles, upper Aguan Valley, June 20, 1977, Gary V. Manley. Type material currently in G.V. Manley collection but will be deposited in (U.S.) National Museum of Natural History.

Etymology: This species is named after Coyoles, Honduras. The holotype was collected sweeping scrub brush about 2 miles north of town.

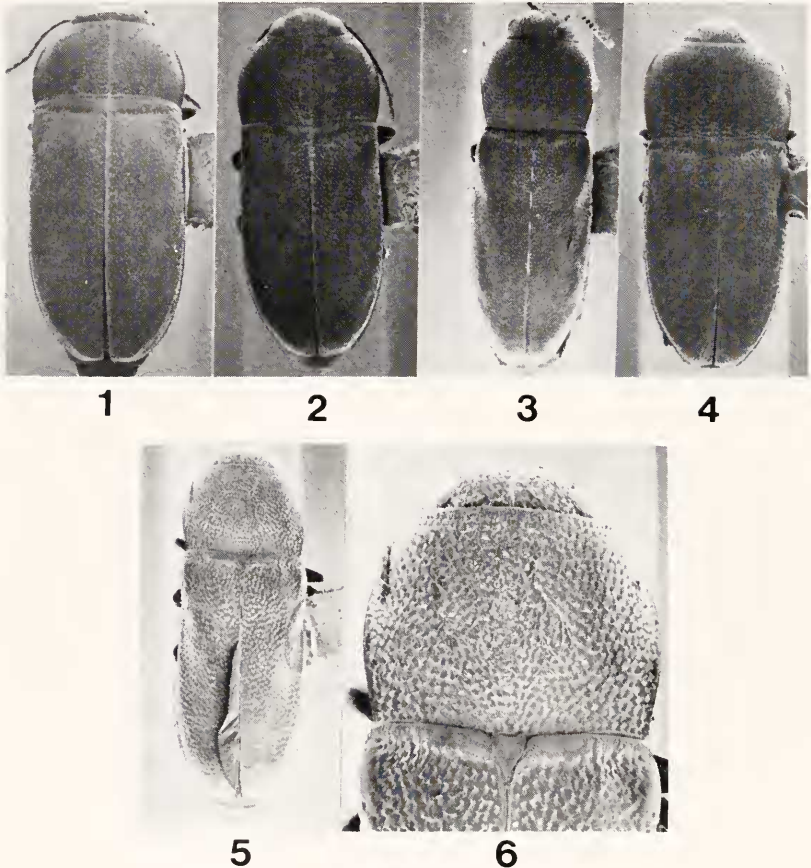
***Mastogenius cyaneus* Fisher**
(Figs. 4, 10 & 13)

***Mastogenius bordoni* Cobos, 1981, new synonymy)**

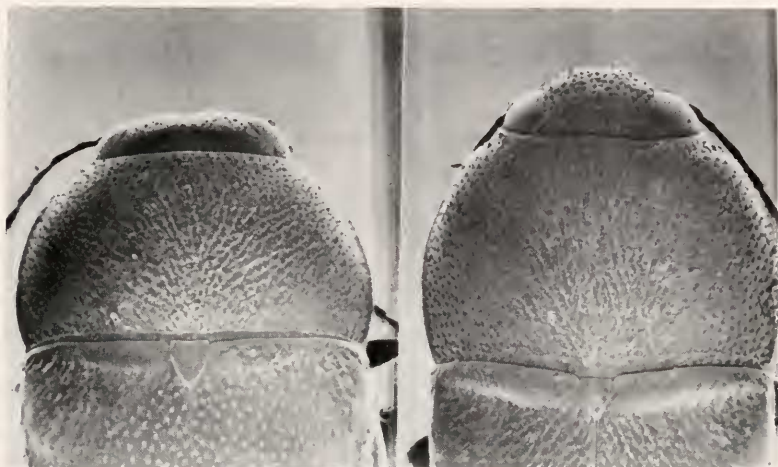
Previously only the holotype specimen of *M. cyaneus* from Panama

was known from Central America (Fisher 1922). *M. cyaneous*, however, is widespread in both central and northern South America, having been collected by the author from Honduras (10 specimens; Comayagua Valley, VI-2-1978), Costa Rica (2 specimens; 1 San Jose, Santa Ana, VI-24-1983; 1, San Jose, 2 km. east of Colon, VI-17-1983), Colombia (5 specimens; 1 Santa Marta, V-15-1981; 1, Santa Marta, V-18-1981; 3, Santa Marta, VII-6-1982), and a single specimen observed from El Salvador (Toncatepeque, 20-VI-1958) deposited in the Canadian National Collection in Ottawa.

Comparisons of homotype material from Honduras as well as specimens of *M. cyaneous* from Costa Rica and Colombia with the type of *M. bordoni*

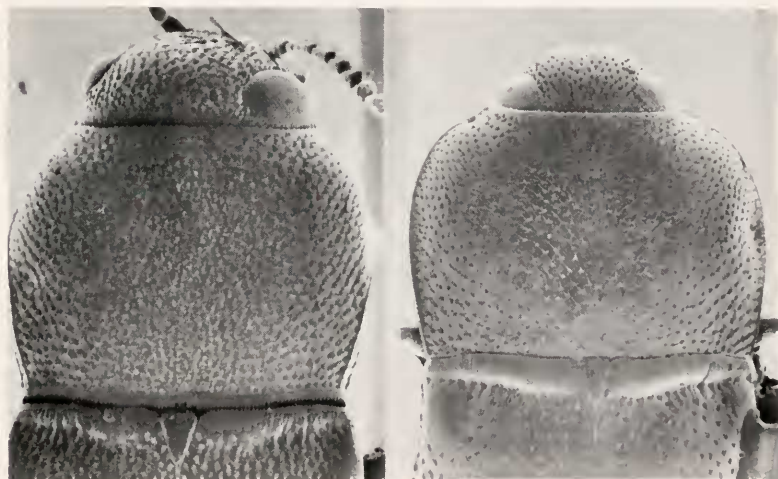


Figs. 1-6. Dorsal view and pronotum. 1. *Mastogenius pacacua* n.sp. 2. *M. cedralensis* n.sp. 3. *M. coyolensis* n.sp. 4. *M. cyaneous* Fisher 5. *M. martinezi* Cobos 6. *M. martinezi* Cobos.



7

8



9

10

Figs. 7-10. Pronotum. 7. *Mastogenius pacacua* n. sp. 8. *M. cedralensis* n. sp. 9. *M. coyolensis* n. sp. 10. *M. cyaneous* Fisher.

Cobos from Venezuela revealed that they are the same species.

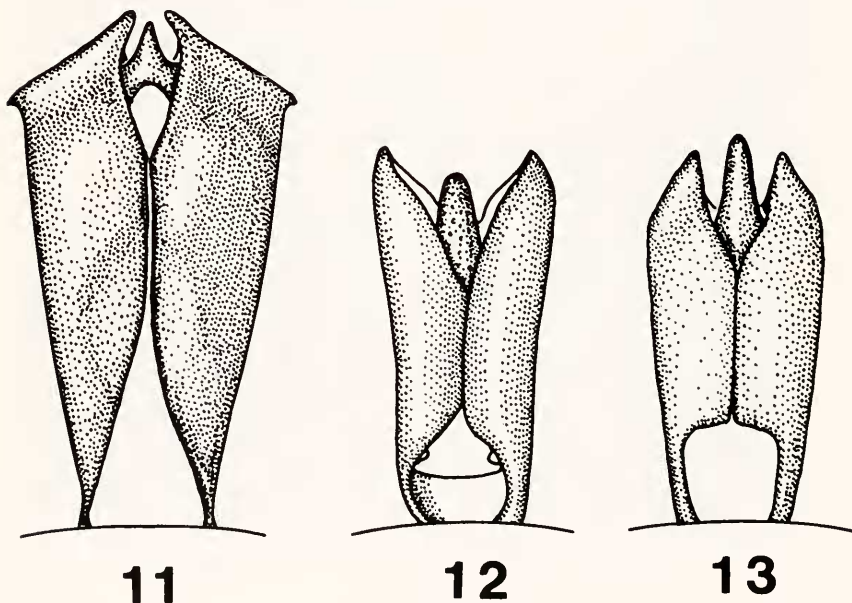
Specimens vary mostly in size with the South American specimens being somewhat smaller but comparisons of the male genitalia from Columbia, Costa Rica, and Honduras show no differences. Other than size, all specimens appear to be identical. Size is also variable in the series of specimens from Honduras.

The holotype would appear to be a female but was not dissected. Figures 4, 10 and 13 were prepared from a homotype male collected from the Comayagua Valley of Honduras and labelled "SEM" in my collection.

Mastogenius martinezi Cobos

(Figs. 5 & 6)

This species was described by Cobos, 1981 from a pair of specimens collected at Cordoba, Argentina. Another female was collected by H. & A. Howden from Cordoba in II- 17-21- 1982, and figures 5 and 6 are based on this specimen.



Figs. 11-13. Dorsal view of male genitalia. 11. *Mastogenius pacacua* n. sp. 12. *M. cedralensis* n. sp. 13. *M. cyaneous* Fisher.

The following key is provided to *Mastogenius* of Central and South America. I have not observed specimens of the following species, and they are placed in the key based on details in the descriptions: *M. solieri*, *M. reticulicollis*, *M. laevifrons*, *M. aeneus*, *M. simulans*, and *M. sulcicollis*.

Key to *Mastogenius* of Central and South America

- 1 Form short, compact, less than 2 1/2 times as long as wide at humeri (usually 2.0: 2.5) 2
 Form more elongate and slender, equal to or more than 2 1/2 times as long as wide at humeri 10
- 2 Front of head strongly sulcate or with depression or pit near middle 3
 Front of head convex or flat, without any median depression 8
- 3 Larger species, over 3.0 mm in length; sculpture of pronotum very dense, coarse, and roughened; color blue, blue-green or fusco-bronze 4
 Smaller species, under 3.0 mm, usually about 2.5 mm in length; sculpture of pronotum variable, color uniformly brown 5
- 4 Dorsal color blue or blue-green. Brazil *M. solieri* Thomson
 Dorsal color fusco-bronze. Brazil *M. reticulicollis* Cobos
- 5 Pronotum widest near middle, narrowed toward anterior angles; front of head shallowly sulcate or with rounded depressed pit but not strongly deeply sulcate to clypeus ... 6
 Pronotum margins divergent from base, widest near anterior angles; front of head longitudinally deeply sulcate from upper frons to clypeus 7
- 6 Elytra blue-black or black; margins of pronotum semi-circularly rounded at middle. Costa Rica *M. pacacua* n. sp.
 Elytra brown; margins of pronotum subparallel at middle. Ecuador
 *M. manglaraltoensis* Manley
- 7 Sulcus on front of head wide and deep, widest near clypeus and more or less uniform in depth from top to bottom, wider than width of eye at greatest width. Ecuador
 *M. changonensis* Manley
 Sulcus on front of head deep and narrower, sides of sulcus more or less parallel, with a deep pit in upper region, not wider near clypeus, narrower than width of eye at greatest width. Venezuela *M. proximus* Cobos
- 8 Pronotum widest anterior to middle, near anterior angles. Central and South America. . .
 *M. cyaneous* Fisher
 Pronotum widest posterior to middle, anterior angles strongly narrowed 9
- 9 Tarsus testaceous, tibia and femur piceous. Costa Rica *M. cedralensis* n. sp.
 Tarsus piceous, concolorous with tibia and femur. Ecuador . . . *M. elinarae* Manley
- 10 Pronotum longer than wide, narrower at the base than elytra; body very long, 4 times the width; color bronze, almost black. Length 4.0 mm. Chile *M. laevifrons* Kerremans
 Pronotum transverse, at least as wide as long, as wide as the base of elytra; body length not more than 3 times the width. 11

- 11 Legs testaceous, body uniformly metallic brown. Argentina . . . *M. martinezi* Cobos
 Legs concolorous with ventral surface 12
- 12 Front of head convex or flat, not sulcate or with a strong median depression 13
 Front of head distinctly sulcate or with a median depression or pit. 18
- 13 Posterior lateral margins of elytra finely toothed; length 3.3 mm. Brazil.
 *M. aeneus* Kerremans
 Posterior lateral margins of elytra unarmed. 14
- 14 Elytra uniformly brown. 15
 Elytra steel-blue, piceous-blue, blue or piceous, but not shining brown 16
- 15 Marginal carina of pronotum turned sharply downward toward submarginal carina near anterior 1/4 of pronotum, nearly touching submarginal carina; elytral surface confluent punctate; ventral surface black-bronze. Honduras *M. coyolensis* n. sp.
 Marginal carina of pronotum widely separated from submarginal carina toward anterior, nearly reaching anterior margin of pronotum, not turned sharply downward; elytral surface distinctly punctate, interspaces distinct and smooth; ventral surface shining brown. Ecuador *M. jipijapa* Manley
- 16 Marginal and submarginal carina of pronotum widest apart near middle of pronotum, anterior end of marginal carina turned down toward submarginal carina and not reaching anterior margin of pronotum. Ecuador *M. guayasensis* Manley
 Marginal and submarginal carina of pronotum widest at anterior end of marginal carina, anterior end of marginal carina straight or turned up and away from marginal carina and reaching anterior margin of pronotum. 17
- 17 Tarsi pale chestnut colored, tibia piceous. Brazil *M. simulans* Cobos
 Tarso concolorous with tibia and femur. Central and South America
 *M. cyaneus* Fisher
- 18 Front of head flat with shallow depression near middle; marginal carina of pronotum turned sharply downward toward submarginal carina near anterior 1/4 of pronotum; disk of elytra slightly flattened; dorsal surface aeneous. Honduras . . . *M. coyolensis* n. sp.
 Front of head with deep longitudinal sulcus; marginal carina not turned sharply downward near apical 1/4 of pronotum; disk of elytra convex, elytra sometimes slightly longitudinally gibbose; dorsal surface deep brown or fusco-piceous. 19
- 19 Sculpture of elytra smooth, distinctly punctate, interspaces smooth, surface glabrous 20
 Sculpture of elytra very dense, confluent, and coarsely roughened; surface hairy. Chile. 21
- 20 Pronotum divergent from base, widest near anterior angles; dorsal surface fusco-piceous. Venezuela *M. proximus* Cobos
 Pronotum widest and subparallel near middle, convergent at both base and apices; dorsal surface brownish. Peru *M. peruvianus* Fisher
- 21* Front when viewed from above distinctly sinuate (with a deep median depression), especially in the female. Pronotum narrowed toward the anterior, with the maximum width in the posterior 1/3 *M. sulcollis* Philipi

*from Cobos, 1981

Front when viewed from above flattened in the middle (with a small median depression more elevated and shallow), equal in both sexes. Pronotum narrowed toward the posterior, with the maximum width in the anterior 1/3. *M. parallelus* Solier

Discussion of Central American Species

The three Costa Rican species are relatively easily separated from each other by a combination of characters. *M. cyaneous* has uniformly deep blue elytra with a piceous pronotum, and is the only species with its pronotum widest anterior to the middle. The pronotum is semi-circularly rounded in the other species, and widest near or posterior to the middle. *M. pacacua* and *M. cedralensis* differ in their elytral pubescence: *M. cedralensis* has abundant, long recumbent setae on the elytral surface; *M. pacacua* is nearly glabrous; *M. pacacua* is longitudinally dome shaped on the elytra; and *M. cedralensis* is slightly flattened on the disk of the elytra.

M. coyolensis from Honduras is rather easily separated from other Central American species by being uniformly brown on the dorsal surface, more elongate, with its elytra twice as long as broad, and coarsely textured. Other species from Central America are either black, blue or have a greenish or blue-green reflection on the dorsal surface, are shorter or broader, with the elytra less than twice as long as broad at humeral angles, and elytra punctate with smooth interspaces.

The following key is provided to *Mastogenius* of Central and South America. I have not observed specimens of the following species, and they are placed in the key based on details in the descriptions: *M. solieri*, *M. reticulicollis*, *M. laevifrons*, *M. aeneus*, *M. simulans*, and *M. sulcicollis*.

ACKNOWLEDGMENTS

The author wishes to express thanks to the following persons and institutions for their contributions to this study: Henry F. Howden, Carleton University for providing time and making available the scanning electron microscope; Lewis Ling for taking the photographs; John M. Kingsolver, USDA, National Museum for making available the holotype of *M. cyaneous* Fisher; Peter H. Carrington for doing the drawings of the genitalia; Carlos Bordon for sending me the holotype of *M. bordoni* and *M. proximus*; Elinar A. Manley, Stanley Wellso, and Henry F. Howden for suggestions during manuscript preparation and the Department of Zoology, Michigan State University for manuscript preparation.

LITERATURE CITED

- Cobos, A. 1981. Estudios sobre la subfamilia Mastogeniinae (Coleoptera: Buprestidae). Bol. Ent. Venez. 1(6): 71-86.
- Fisher, W.S. 1922. The leaf and twig mining buprestid beetles of Mexico and Central America. Proc. U.S. Nat. Mus. 62(8): 94-95.
- Manley, G.V. 1986. A new genus and three new species of buprestid beetles (Buprestidae: Mastogeniini) from northern South America. Coleopt. Bull. 40(3): 232-241.
- Nelson, G.H. 1985. Clarification of the taxonomic status in various genera of the family Buprestidae (Coleoptera). Coleopt. Bull., 39(2): 133-146.
- Toyama, Masao. 1983. The buprestid beetles of the subfamily Mastogeniinae from the Oriental region (Coleoptera, Buprestidae). Entomol. Rev. Japan. 38(1): 55-64.